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IS 5325 (1989): Box Pallets for Through Transit of Goods -
Methods of Test [TED 12: Freight Containers and Pallets]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

BOX PALLETS FOR THROUGH TRANSIT OF GOODS — METHODS OF TEST

(First Revision)

भारतीय मानक

वस्तुओं के परिवहन के लिए बाक्स पैलेटों की परीक्षण पद्धतियाँ

(पहला पुनरीक्षण)

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 25 October 1989, after the draft finalised by the Pallets Sectional Committee had been approved by the Heavy Mechanical Engineering Division Council.

The box pallets for through transit referred to herein means those commonly used naturally in related industries from the starting site to the destination through various transporting means (such as railways, trucks and ships).

This standard was first published in 1969 covering basic tests for determining suitability of box pallets and post pallets.

In this revision, the amount of test load has been increased from 1.25 to 2.5 times the maximum payload of the box pallet during downward loading test and from 0.25 to 0.4 times during horizontal loading test.

In the preparation of this standard, assistance has been derived from JIS Z 0612-1977 'Testing methods of box pallets for through transit', issued by Japanese Industrial Standards Committee (JISC).

Indian Standard

BOX PALLETS FOR THROUGH TRANSIT OF GOODS — METHODS OF TEST

(First Revision)

1 SCOPE

1.1 This standard specifies methods of test for box pallets for through transit of goods for determining their suitability.

2 REFERENCES

<i>IS No.</i>	<i>Title</i>
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IS 3971 : 1967	Glossary of terms on pallets
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3 TERMINOLOGY

3.1 For the purpose of this standard, the terms and definitions given in IS 3971 : 1967 in addition to the following shall apply.

3.2 Downward Loading Test of Box Pallet

A test for the strength against loading in the vertical direction during transportation by applying a downward load to the load carrying surface of the box pallets.

3.3 Horizontal Loading Test of Box Pallet

A test for the strength of the upper structure against loading in the horizontal direction during transportation by applying a load to the side plates of the box pallet.

3.4 Superimposed Loading Test of Box Pallet

A test for the strength against the superimposed load exerted on the upper structure of the box pallet.

4 TEST SPECIMENS

4.1 The number of test specimens used in each test shall be three or more.

5 METHODS OF TEST

5.1 Downward Loading Test

5.1.1 Place the specimen box pallet on rigid and horizontal supports and support it at the superimposed load bearing area.

5.1.2 Apply an equally distributed load corresponding to 2.5 times the maximum payload to the load carrying surface of the box pallet, and

measure the maximum deflection quantity of the load carrying surface.

5.1.3 Remove the load, and after leaving it standing for 30 minutes, measure the residual deflection quantity of the part where the maximum deflection has occurred.

5.1.4 Measure the deflection quantity with a dial gauge or the like, as shown in Fig. 1 and 2.

5.2 Horizontal Loading Test

The test shall be performed by either of the following two kinds of tests.

5.2.1 Test 1

5.2.1.1 Fix the specimen box pallet at the root of its upper structure so as to make the side plate being tested positioned on the lower side and maintained horizontal (see Fig. 3).

5.2.1.2 Place a load corresponding to 0.4 times the maximum payload to distribute it equally on the side plate being tested.

5.2.1.3 Measure the deflection quantity at the 6 positions as shown in Fig. 3, by '*'.

5.2.1.4 Remove the load, and after leaving it standing for 30 minutes, measure the residual deflection quantity.

5.2.1.5 Perform this test for each side plate.

5.2.2 Test 2

5.2.2.1 Fill the specimen box pallet so as to obtain a load equal to the maximum payload.

5.2.2.2 Fix the box pallet horizontally on the gliding wagon of an incline impact tester.

5.2.2.3 Let the gliding wagon run with a shock absorber interlayer between the gliding wagon and the impact plate to apply an impact of 3 g.

5.2.2.4 Examine for the occurrence of abnormalities (see Fig. 4).

5.2.2.5 Perform this test for each side plate.

5.3 Superimposed Loading Test

5.3.1 Place the specimen box pallet on a rigid and horizontal base.

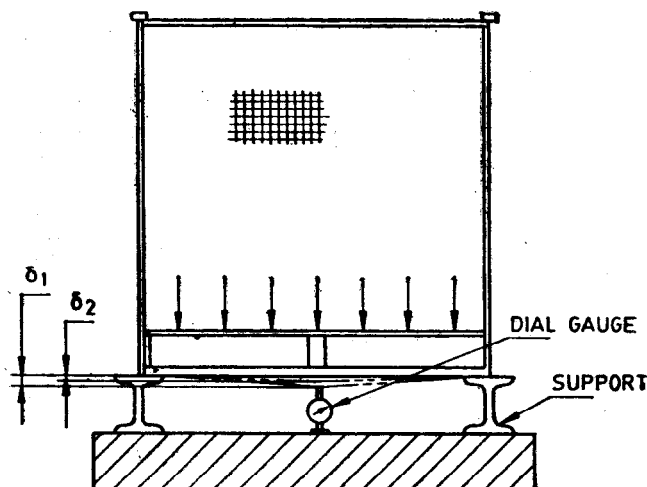


FIG. 1 DOWNWARD LOADING TEST

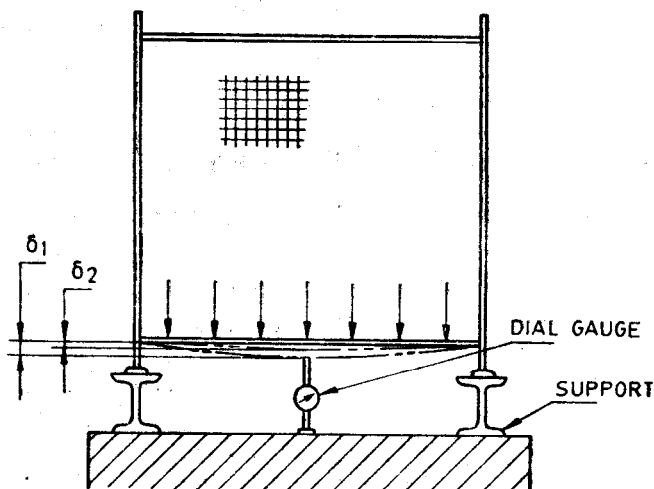


FIG. 2 DOWNWARD LOADING TEST

5.3.2 Stack loaded box pallets of the same shape in the prescribed number of stages. In this test, apply to the specimen box pallet a load corresponding to the superimposed load plus 25 per cent.

5.3.3 Examine the occurrence of abnormalities.

6 TEST REPORT

6.1 The following items shall be written in the test report:

a) Type, class, load, dimensions and material used;

b) Self weight;

c) Temperature and humidity conditions during test;

d) Summary and results of test;

e) Downward loading test;

f) Horizontal loading test;

g) Superimposed loading test; and

h) Other information required.

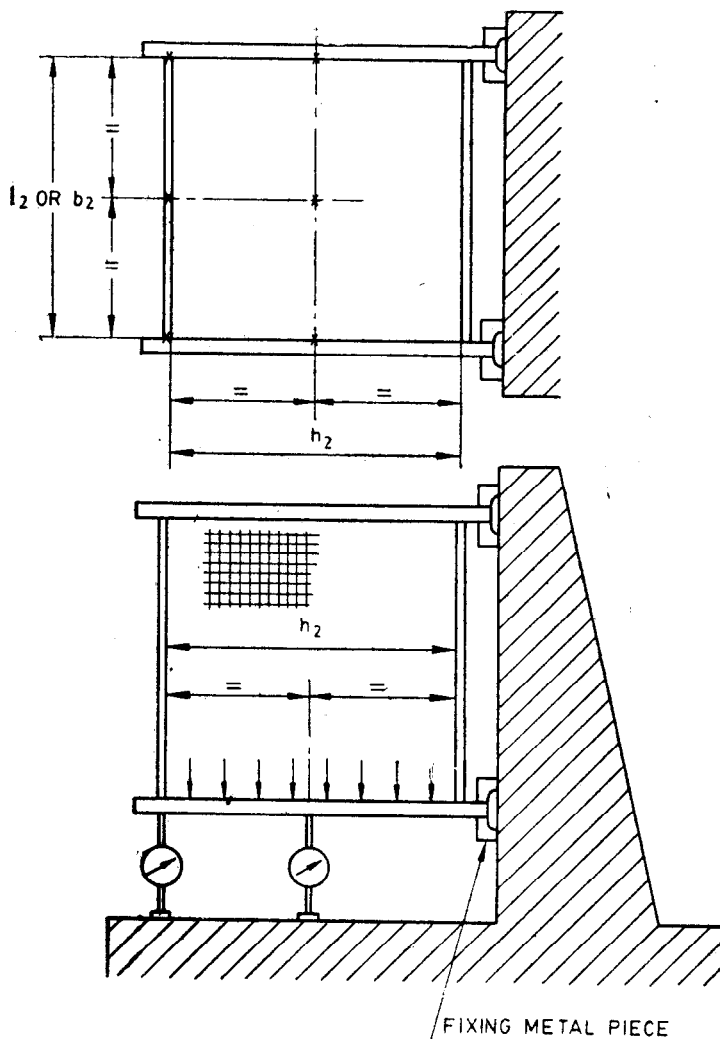


FIG. 3 HORIZONTAL LOADING TEST

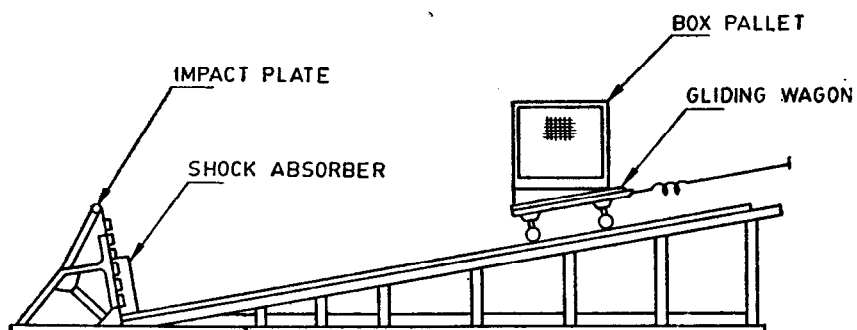


FIG. 4 HORIZONTAL LOADING TEST

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